

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings and versions of claims in this application.

1. (Currently amended) ~~An~~ A vertebral arthroplasty prosthesis, comprising:
 - ~~first and second bone contacting members configured for engaging opposing articulated bones;~~
 - a first support member having a first anterior-posterior and lateral pivotal axis;
 - a second support member having a second anterior-posterior and lateral pivotal axis; and
 - an articulation member including:
 - ~~supportively associated~~ a first articulation portion having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and
 - a second articulation portion having a second pivotal joint member in pivotal association with the second contacting support members to allow relative pivotal and translational movement therebetween over anterior-posterior and lateral pivotal axes, and anterior-posterior and lateral translational axes, for pivoting at the second pivotal axis,
 - wherein the first and second articulation portions are translatable with respect to each other to allow the opposing bones to pivot and translate the first and second support members and pivotal axes with respect to each other, wherein the articulation member is configured to permit the translational movement substantially uncoupled from the pivotal movement;
 - wherein the first support member, articulation member, and second support member are configured for cooperatively supporting vertebrae on either side of the prosthesis of a spinal column; and
 - wherein the prosthesis is configured such that, when implanted in the spinal column, the articulation member is disposed in a location corresponding to an intervertebral disk.

2. (Currently amended) The prosthesis of claim 1, wherein the articulation member is configured for limiting ~~the a~~ translational movement along ~~both translational axes lateral and an anterior-posterior directions~~ to a predetermined range.

3. (Currently amended) The prosthesis of claim 2, wherein the articulation member is configured for limiting ~~the a~~ pivotal movement along both ~~pivotal axes~~ the first pivotal axis and the second pivotal axis to a predetermined range.

4. (Cancelled)

5. (Cancelled)

6. (Currently amended) The prosthesis of claim 1, wherein the first and second articulations portions ~~articulation member comprises first and second portions that are translatable with respect to each other to provide the relative translational motion along at least one of the translational axes~~ translate the first and second support members and pivotal axes with respect to each other substantially uncoupled from pivotal movement of the first and second support members.

7. (Currently amended) The prosthesis of claim ~~6~~ 1, wherein the first ~~contacting member is pivotably mounted to the first articulation portion~~ and second pivotal joint members are configured to provide universal pivoting of the first and second support members about the first and second pivotal axes, respectively.

8. (Currently amended) The prosthesis of claim ~~6~~ 1, wherein the ~~second contacting member is mounted for pivoting with respect to the second articulation portion~~ support members have corresponding joint members that are associated with the first and second pivotal joint members to provide a ball and socket joint for pivoting about each of the first and second pivotal axes.

9. (Cancelled)

10. (Original) The prosthesis of claim 1, wherein the articulation member is configured to permit relative axial rotation between the contacting members.

11. (Currently amended) The prosthesis of claim 1, ~~further comprising wherein the second support member comprises a body prosthetic portion disposed between the contacting members, wherein the articulation member comprises first and second articulation portions articulably associating the body prosthetic portion with each of the first and second contacting members, respectively, the prosthesis having an axial height corresponding approximately to the height of a vertebra and two adjacent disks for engaging the opposing vertebrae which are non-sequential with each other.~~

12. (Currently amended) An arthroplasty prosthesis, comprising:
first and second ~~bone contacting~~ support members configured for engaging opposing articulated bones, the first support member having a first at anterior-posterior and lateral pivotal axis, and the second support member having a second anterior-posterior and lateral pivotal axis; and

first and second articulation members, the first articulation member having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and the second articulation member having a second pivotal joint member in pivotal association with the second support member for pivoting at the second pivotal axis, wherein the
~~each of the first and second articulation members comprising first and second articulation portions that are in sliding contact with each other to permit translation of the first and second support members and pivotal joint members with respect to each other, the first articulation portion of each of the first and second articulation members being pivotally associated with the first and second bone contacting members, respectively~~

wherein the first support member, first articulation member, second support member, and second articulation member are configured for cooperatively supporting vertebrae on either side of the prosthesis, and the prosthesis is configured such that, when implanted in the spinal column, the articulation member is disposed in a location corresponding to an intervertebral disk.

13. (Currently amended) The prosthesis of claim 12, wherein one of the first support ~~contacting~~ member and the ~~first articulation portion of the~~ first articulation member defines a protrusion extending generally along an axis extending between the ~~bone contacting~~ support members, and the other defines a recess configured for receiving the protrusion to pivotally associate the first ~~contacting~~ support member and the ~~first articulation portion of the~~ first articulation member.

14. (Currently amended) The prosthesis of claim 13, wherein one of the second support ~~contacting~~ member and the ~~first articulation portion of the~~ second articulation member defines a protrusion, and the other defines a recess configured for receiving the protrusion to pivotally associate the second ~~contacting~~ support member and the ~~first articulation portion of the~~ second articulation member.

15. (Currently amended) The prosthesis of claim 13, wherein at least one of the recess and protrusion is tapered substantially about a spinal axes that extends axially between the ~~connecting~~ support members.

16. (Currently amended) The prosthesis of claim 12, wherein the first and second articulation ~~portions of each of the first and second articulation~~ members comprise blocking members juxtaposed radially with respect to a spinal axes that extends axially between the support ~~contacting~~ members for abutting each other to limit the translational movement therebetween.

17. (Currently amended) The prosthesis of claim 16, wherein the blocking members comprise:

a key extending from one of the articulation ~~portions~~ members; and

a keyway defined in the other articulation ~~portion~~ member in which the key is received for translational movement, the keyway having an edge wall disposed to block the translational movement of the key.

18. (Original) The prosthesis of claim 17, wherein the edge wall and key are annular.

19. (Original) The prosthesis of claim 17, wherein the edge wall comprises two edge walls disposed on opposite sides of the keyway such that the key and edge wall concurrently contact at least two locations to block the translational movement of the key within the keyway.

20. (Cancelled)

21. (Currently amended) The prosthesis of claim 12, wherein the first and second articulation ~~portions~~ members are ring shaped with a hollow center.

22. (Currently amended) The prosthesis of claim 21, further comprising a retaining member associated with the ~~contacting support~~ members and extending through the hollow center of the articulation ~~portions~~ members to retain the articulation ~~portions~~ members in the association with the ~~contacting support~~ members.

23. (Original) The prosthesis of claim 22, wherein the retaining member comprises a suture.

24. (Currently amended) The prosthesis of claim 21, wherein at least one of the ~~vertebra~~ ~~contacting support~~ members comprises a post extending into the hollow center of at least one of the articulation ~~portions~~ members for retaining the at least one articulation ~~portion~~ member in said association with the ~~contacting support~~ member associated therewith.

25. (Currently amended) The prosthesis of claim 12, further comprising a body prosthetic portion disposed between the first and second articulation ~~portions~~ members of ~~the first and second articulation members~~, such that the ~~contacting support~~ members are pivotally and translationally moveable with respect thereto.

26. (Currently amended) ~~A spinal~~ The prosthesis of claim 1, comprising wherein the first support member comprises a first and second bone contacting ~~members~~ member

configured for engaging ~~opposing first and second bones of the axial skeleton~~ vertebra of the spinal column, ~~respectively~~, the first contacting member comprising:

a fastener mount portion configured for attaching a bone fastener thereto; and
vertebral contacting surfaces disposed and oriented for positioning an apophyseal ring of the first bone with respect to the fastener mount portion in an attachment position for attaching the fastener from the fastener mount portion through the apophyseal ring to attach the first contacting member to the first bone.

27. (Cancelled)

28. (Original) The prosthesis of claim 26, wherein the fastener mount portion defines an opening for receiving a threaded surgical fastener therethrough.

29. (Original) The prosthesis of claim 28, wherein the fastener mount portion is oriented for inserting the fastener diagonally into the apophyseal ring.

30. (Cancelled)

31. (Original) The prosthesis of claim 26, wherein the vertebral contacting surfaces are oriented to capture axial and radial surfaces of the vertebral body for positioning the apophyseal ring in the attachment position.

32. (Cancelled)

33. (Cancelled)

34. (Currently amended) The prosthesis of claim 12, wherein the opposing articulated bones comprise first and second vertebra bodies, each having a respective apophyseal ring, and wherein the first and second ~~bone-contacting~~ support members comprise:

an axial contacting surface oriented to abut and support an axial face of a respective one of the first and second vertebra bodies;

a radial contacting surface configured to abut a radial side of the respective one of the first and second vertebra bodies; and

an apophysis receiving area between the axial and radial contacting surfaces defining an apophysis groove that is disposed and configured for receiving the apophyseal ring of the respective one of the first and second vertebra bodies.

35. (Canceled)

36. (Currently amended) The prosthesis of claim 1, wherein at least one of the ~~contacting~~ support members and articulation member is made of a radiolucent material such that the visibility of the prosthesis during X-ray, M.R.I. or C.T. scan is reduced.

37. (Currently amended) The prosthesis of claim 36, wherein the ~~contacting~~ support members comprise radiopaque marks visible in an MRI, CT scan, or x-ray.

38. (Currently amended) The prosthesis of claim 36, wherein each of the ~~contacting~~ support members is substantially radiolucent.

39. (Cancelled)

40. (Currently amended) An arthroplasty prosthesis for implantation in an implantation site between two non-adjacent bones of the axial skeleton, comprising:

a vertebral body prosthetic portion configured for replacing at least one vertebral body of a patient, the body prosthetic portion having an upper body anterior-posterior and lateral pivotal axis and a lower body anterior-posterior and lateral pivotal axis;

upper and lower disk prosthetic portions, configured to replace at least portions of two intervertebral disks disposed adjacent the replaced portion of the vertebral body, the disk prosthetic portions configured to contact and support axial skeleton bones adjacent the implantation site and being articulated with the body prosthetic portion, the upper and lower disk prosthetic portions respectively having a upper and lower anterior-posterior and lateral pivotal axes; and

~~upper and lower articulation members, each comprising first and second articulation portions that are movably associated with each other, the first articulation portion being pivotally associated with a respective one of the upper and lower disk prosthetic portions, and the second articulation portion being pivotally associated with the body prosthetic portion~~

wherein the upper disk prosthetic portion comprises:

an upper support member having an upper first anterior-posterior lateral pivotal axis, and

an upper first articulation portion having a first pivotal joint member in pivotal association with the upper support member for pivoting at the first pivotal axis, and

an upper second articulation portion having a second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the upper body pivotal axis; and

wherein the lower disc prosthetic portion comprises:

a lower support member having a second anterior-posterior lateral pivotal axis, and

a lower first articulation portion having a first pivotal joint member in pivotal association with the lower support member for pivoting at the second pivotal axis

a lower second articulation portion having a lower second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the lower body pivotal axis; and

wherein the body and disk prosthetic portions and the articulation members are associated for cooperatively carrying spinal loads at the implantation site.

41. (Currently amended) The prosthesis of claim 12, wherein at least one of the ~~contacting~~ support members has and is configured to deliver an antibiotic, protein, or biologically active substance to the implantation site.

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Currently amended) The prosthesis of claim 40, wherein both of the of the upper and lower disk portions include a ~~bone-contacting~~ support member configured for engaging a respective axial skeleton bones adjacent the implantation site.